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1990 BUDGET GUIDE

**ESTIMATED PRICES
for
CROP OPERATING INPUTS
and
CAPITAL INVESTMENT ITEMS**

Darwin P. Snyder

Department of Agricultural Economics
Cornell University
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, New York, 14853

ABSTRACT

Current costs for 1990 crop inputs and capital investments common to New York agriculture are summarized and/or estimated from supplier surveys and contacts made in early 1990. The guide includes seed, fertilizer, pesticides, labor, and fuel costs for crop inputs. Capital investment items include power and field equipment and structures. An index of prices paid by New York dairy farmers is provided for 1984 through 1989 along with estimates for 1990.

1990 Budget Guide

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1990 BUDGET GUIDE

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Introduction

Anyone concerned with controlling production costs for farm enterprises knows the importance of planning ahead. The need to control costs is important regardless of commodity prices. Financial planning for the year ahead should include budgeting to determine the cash flows connected with crop inputs and capital purchases.

This publication includes a compilation of prices acquired from several suppliers. It is intended to serve as a guide for farm operators and those who work with them on the budgeting process. Most prices shown herein are averages of several observations obtained in January to February 1990. Costs for dairy structures and equipment were obtained in 1989 from contractors and from consultations with agricultural engineers. They continue to be considered reasonable for general planning purposes.

Prices vary - sometimes widely - between vendors and depend on options, quality, and other factors. Average prices or estimates of reasonable prices are presented. Users should recognize that prices for individual situations may differ significantly from those presented.

The prices noted for tractors, trucks, and field equipment are averages of list prices for each item equipped as normally purchased. Accompanying notes are used in some cases to further identify features of a particular capital item.

A table of index prices paid by New York dairy farmers is included to provide a perspective of several years. The indices indicate how the major cost items for a dairy farm business have changed in recent years and provide an estimate of how they may be expected to change in 1990.

*Research Associate, Department of Agricultural Economics, Cornell University.

Table 1.

CROP OPERATING INPUTS
New York, Spring 1990

Item	Number of responses	Average price ¹	Unit
		\$	
<u>Seed:</u>			
Alfalfa	7	2.91	pound
Timothy	7	0.80	pound
Corn	7	71.14	80,000 kernel unit
Oats	5	6.07	bushel
Wheat	2	7.75	bushel
Red kidney beans	2	0.75	pound
Soybeans	4	15.25	bushel
<u>Lime:</u> Spread, 91% ENV ²	5	25.69	ton
<u>Fertilizer:</u>			
Bulk blended:			
Nitrogen (N)	5	0.22	pound of N
Phosphorus (P ₂ O ₅)	5	0.20	pound of P
Potassium (K ₂ O)	5	0.12	pound of K
30-32% liquid N	6	137	ton
30-32% liquid N	6	0.22	pound
33.5-0-0 ammonium nitrate	2	188	ton
46-0-0 urea	6	179	ton
82-0-0 anhydrous ammonia	4	235	ton
0-46-0	5	195	ton
0-0-60	7	146	ton
11-52-0 MAP (monoammonium phosphate)	7	220	ton
18-46-0 DAP (diammonium phosphate)	4	198	ton

¹Average price, FOB store, before discounts.²Effective Neutralizing Value.

Table 1 (continued)

CROP OPERATING INPUTS
New York, Spring 1990

Item	Number of responses	Average price \$	Unit
6-24-24	7	183	ton
10-20-20	7	172	ton
15-15-15	7	167	ton
<u>Pesticides:</u>			
<u>Herbicides:</u>			
2,4-D	7	11.86	gallon
2,4-DB	4	27.19	gallon
Atrazine 4L	7	11.12	gallon
Banvel	7	63.93	gallon
Bicep	6	27.51	gallon
Bladex 4L	6	21.72	gallon
Dual 8E	7	56.70	gallon
Eptam 7E	7	22.96	gallon
Eradicane	6	22.48	gallon
Gramoxone	3	37.32	gallon
Lasso	7	22.90	gallon
Lorox L	5	61.21	gallon
Princep 4L	4	14.22	gallon
Prowl	7	25.84	gallon
Ranger	7	33.21	gallon
Roundup	6	66.34	gallon
Sencor DF	3	24.17	gallon

Table 1 (continued)

CROP OPERATING INPUTS
New York, Spring 1990

Item	Number of responses	Average price \$	Unit
Treflan	7	28.96	gallon
Valpar	5	52.23	gallon
<u>Insecticides:</u>			
Corn/bean seed treatment	2	0.95	acre
Counter	7	1.57	pound
Diazinon 14G	4	1.49	pound
Dyfonate 20G	7	1.75	pound
Furadan 15G	6	1.45	pound
Lorsban 15G	7	1.54	pound
Malathion 5E	4	20.12	gallon
Methoxachlor 2E	4	15.00	gallon
Sevin 80W	3	2.64	pound
Thimet 20G	5	1.45	pound
<u>Fungicides:</u>			
Benlate DF	3	15.45	pound
<u>Other Operating Inputs:</u>			
Baling - twine	5	22.48	9000 ft bale
wire	3	35.28	cwt (6500 ft)
Labor - including all employer costs			
Regular, full-time, career	*	7.50	hour
Part-time, seasonal	*	5.50	hour
Interest	*	11.5	percent
Fire insurance - Real estate, chattel	*	6.00	per \$1,000 coverage
Fuel - diesel - delivered, field use	*	0.90	gallon, w/o tax
pump price	*	1.20	gallon
gas, UL - delivered, field use	*	0.80	gallon, w/o tax
pump price	*	1.00	gallon
LP gas, propane for crop drying	*	0.75	gallon

*These costs are estimates that would be reasonable for budgeting purposes in typical farm situations. They are generally based on contacts with 2-3 vendors.

Table 2.

FARM POWER AND EQUIPMENT LIST PRICES
New York, Spring 1990

Item	Number of Responses	Average List Price \$
<u>Tractors</u> - equipped as normally purchased, pto hp, diesel unless otherwise noted.		
12 hp (gas), lawn & garden, hydro transmission	5	2,901
25 hp no cab	6	13,474
40 hp no cab	7	17,546
50 hp no cab	6	19,871
60 hp no cab	5	23,685
60 hp w/front wheel assist no cab	7	29,271
80 hp no cab	7	29,785
80 hp w/front wheel assist no cab	7	35,301
100 hp w/cab & air	7	41,837
100 hp w/front wheel assist w/cab & air	7	50,418
120 hp w/cab & air	7	49,862
120 hp w/front wheel assist w/cab & air	7	58,120
140 hp w/cab & air	7	61,262
175 hp 4WD, with cab w/cab & air	7	76,606
<u>Trucks</u>		
Pickup - 3/4T, auto, V8, 2WD	4	14,500
3/4T, auto, V8, 4WD	4	16,500
Large road truck - 400 cu. in. gas engine, 5 speed trans., 18 ft. solid box w/hoist, heavy tires, single, 2 speed rear axle	3	34,000
<u>Primary Tillage Equipment</u>		
Moldboard plow - auto reset, semi-mounted		
4-16"	5	7,711
5-16"	5	9,142

Table 2. (continued) FARM POWER AND EQUIPMENT LIST PRICES
New York, Spring 1990

Item	Number of Responses	Average List Price \$
<u>Primary Tillage Equipment</u> continued		
Moldboard plow - auto reset, semi-mounted (continued)		
5-18"	6	9,931
6-18"	6	11,743
Chisel plow - w/front disc		
11 ft, 7 shank	6	8,818
13 ft, 9 shank	5	9,941
Offset disc - 13 ft, 26" disc	5	9,702
<u>Secondary Tillage Equipment</u>		
Disc - 14 ft	7	6,672
16 ft	7	8,690
20 ft	7	12,650
Drag - spring tooth harrow		
16 ft	6	3,568
20 ft	5	4,351
Cultimulcher - 12 ft		
15 ft	6	8,153
Field cultivator - 16-18 ft		
16-18 ft	5	5,949
Cultipacker - 12 ft		
14 ft	4	2,490
30 ft	4	2,981
Land roller - 24 ft		
24 ft	5	9,326
Ridge cultivator (builder) - 6 row		
6 row	2	8,453
	3	6,054

Table 2. (continued) FARM POWER AND EQUIPMENT LIST PRICES
New York, Spring 1990

Item	Number of Responses	Average List Price \$
<u>Planting Equipment</u>		
Grain drill - w/seeder, dry fertilizer		
15 x 7"	5	6,033
21 x 7"	3	7,768
24 x 7"	4	9,036
Cultipacker seeder - 10 ft	4	5,317
12 ft	4	7,317
Corn planter - conventional plateless w/dry fertilizer attachment		
4 row	5	9,695
6 row	5	13,261
8 row	4	18,575
12 row	5	31,397
Corn planter - no-till plateless w/dry fertilizer attachment		
4 row	4	10,933
6 row	4	15,471
8 row	3	21,036
<u>Other Growing Equipment</u>		
Cultivator, row crop - 4 row	5	3,027
6 row	5	3,783
8 row	5	5,428
12 row	4	9,829
Sprayer - 28 ft, 300 gallons	3	4,583
40 ft, 500 gallons	3	7,033

Table 2. (continued) FARM POWER AND EQUIPMENT LIST PRICES
New York, Spring 1990

Item	Number of Responses	Average List Price \$
<u>Harvesting Equipment</u>		
Rotary mower - 5 ft	6	815
6 ft	3	1,051
Mower conditioner - 9 ft	7	11,393
12 ft	7	16,614
Side delivery rake - 9 ft	6	3,622
Baler w/kicker, mid size, twine	7	14,571
Large round baler - 5 ft	7	13,986
Flail chopper - 6 ft	7	7,629
Forage harvester - pto base unit w/o metal detector		
2 row	7	15,130
3 row	7	19,525
Windrow pickup head - 5.5 ft	7	2,838
7.5 ft	7	3,913
Corn head - 2 row	7	4,622
3 row	7	9,437
Snapper head - 1 row	1	3,500
2 row	3	7,900
Blower - 4 to 5 ft diameter	6	4,222
Combine - self-propelled, diesel, 2 wheel drive		
4 row power unit	4	74,938
4 row corn head	4	12,672
4 row bean head	3	9,607
13 ft grain head	4	7,729

Table 2. (continued) FARM POWER AND EQUIPMENT LIST PRICES
New York, Spring 1990

Item	Number of Responses	Average List Price \$
Combine - self-propelled, diesel, 2 wheel drive (continued)		
6 row power unit	6	96,659
6 row corn head	6	19,224
6 row bean head	2	18,911
15 ft grain head	5	8,845
4 wheel drive option	5	9,506
<u>Transport Equipment</u>		
Running gear - chassis w/tires		
8 ton	7	1,573
12 ton, tandem rear axle	7	2,449
Bale wagon w/8 ton gear, 4 tires	6	2,432
Round bale mover - 3 pt hitch	5	297
Flat bed transport	3	2,500
Forage wagons - 12 ton chassis, 6 tires, roof		
Side unloading - auger or belt	5	9,277
Side dump - hydraulic lift		
12 ft body	5	10,076
14 ft body	5	11,154
Gravity grain wagon		
300 bu box with 8 ton gear & tires	5	2,020
Fertilizer spreader	3	3,354
Front end loader - 5 ft material bucket	7	3,915
6 ft material bucket	7	4,883

Table 2. (continued) FARM POWER AND EQUIPMENT LIST PRICES
New York, Spring 1990

Item	Number of Responses	Average List Price \$
Manure spreader - hydraulic gate		
225 bu \pm	7	5,902
350 bu \pm	7	9,220
Slurry spreader		
2,400 gallons	6	11,598
Feed mixer wagon w/scales, chassis, tires		
300-350 bu	6	20,421

Table 3.

ESTIMATED CAPITAL INVESTMENT COSTS
DAIRY BARN AND MILKING CENTERS FOR TWO HERD SIZES
New York, Spring 1989

Item	125 Cows	250 Cows
Dairy Barn & holding area - includes site prep & all concrete work	\$120,000	\$225,000
Feed bunk or manger & headgates	3,000	5,000
[Computer feeding system	[10,000	20,000]
Freestalls - metal	6,000	12,000
Mechanical manure scraper	15,000	20,000
Milking Center - Includes milk room	50,000	70,000
Parlor equipment - no feeders	6,000	10,000
Milking system - includes pump, controller, pipeline, water heater, heat exchanger, etc.	20,000	24,000
Automatic detachers -		
Basic	12,000	20,000
[Additional for computer capability	[12,000	20,000]
[Computer	[7,000	7,000]
Milk tank includes washer, compressors, & controls	20,000	30,000
Crowd gate	3,000	4,000
Plumbing, wiring, waterers, lighting	10,000	15,000
Well - 200 ft deep, 100 ft of 6" casing with pump	<u>5,000</u>	<u>5,000</u>
TOTAL COST	\$270,000	\$440,000
Per Cow	\$2,160	\$1,760
TOTAL - with computer feeding, milking	\$299,000	\$487,000
Per Cow	\$2,392	\$1,920

Notes:

1. Barn complex - four rows of freestalls, center drive through design, pole construction with attached masonry, insulated parlor and milk room. All barn equipment installed.
2. 125 cow herd uses a double 6 herringbone parlor with a 2,000 gallon bulk tank. 250 cow herd uses a double 10 herringbone parlor with a 4,000 gallon bulk tank.
3. Excludes feed storage facilities.

Source: D.P. Snyder, 1989 Budget Guide, A.E. Res. 89-7, Department of Agricultural Economics, Cornell University. Data reviewed by personal communication with R. Guest and W. Irish, Department of Agricultural Engineering, Cornell University.

Table 4.

HORIZONTAL SILOS
ESTIMATED COSTS
New York, Spring 1990

Size	Total Cost	@42 lbs/cu ft		@44 lbs/cu ft	
		Capacity	Cost/ton	Capacity	Cost/ton
	\$	tons	\$	tons	\$
Width x length x height in ft.:					
30 x 60 x 10	13,914	378	37	396	35
30 x 80 x 10	17,844	504	35	528	34
40 x 80 x 10	19,968	672	30	704	28
12	22,262	806	28	845	26
40 x 100 x 10	24,252	840	29	880	28
12	27,120	1,008	27	1,056	26
50 x 80 x 10	22,092	840	26	880	25
12	24,386	1,008	24	1,056	23
50 x 100 x 10	26,730	1,050	25	1,100	24
12	29,598	1,260	23	1,320	22
60 x 100 x 10	29,208	1,260	23	1,320	22
12	32,076	1,512	21	1,584	20
60 x 120 x 10	34,200	1,512	23	1,584	22
12	37,642	1,814	21	1,901	20

Notes: (Silo has concrete walls and floor with open ends.)

1. Capacity is within the silo walls. Capacity and construction cost per ton data are provided for densities of 42 and 44 pounds per cubic foot.
2. Cost includes site preparation at \$0.30 per square foot of floor area.
Floor area includes two full width aprons 20 feet long and reinforcing.
Average cost at \$1.47 per square foot.
Walls are erected and in place with necessary supports, footers, and reinforcing. Average cost at \$7.17 per square foot.
Costs are for silo built within 30 miles of dealer's plant.
3. Capacity would be greater and cost per ton lower if average depth of silage exceeded wall height.
4. Costs are calculated from data supplied by three vendors.

Table 5.

TOWER CONCRETE SILOS AND TOP UNLOADERS
ESTIMATED COSTS
New York, Spring 1990

Silo Size	Capacity	Cost			
		Silo	Per Ton	Unloaders	
Diameter x height in feet	Tons @ 70% moisture content	\$	\$	Surface	Ring
16 x 50	260	15,295	52	} 5,584	6,719
60	340	17,707	50		
18 x 60	430	19,501	44	} 5,898	7,239
70	540	22,681	39		
20 x 60	530	21,449	39	} 6,153	7,580
70	660	24,970	35		
22 x 60	640	22,000	37	} 7,500	10,500
70	790	25,000	35		
24 x 60	760	27,779	35	} 6,730	8,820
70	940	32,115	31		

Notes:

1. Includes site preparation, foundation, roof, chute, ladder with cage, and pipe.
2. Most silo manufacturers contacted do not offer silos larger than 24 feet in diameter.
3. Data for the unloaders is generally from two dealers. Data for the silos is generally from four dealers.

Table 6.

FARM MACHINE STORAGE BUILDINGS
COST ESTIMATES
New York, 1990

General Specifications of Structure -

- About 3,000 to 5,000 square feet, metal shell, timber column, large doors on both ends and one side passage door, basic wiring, no concrete floor, delivered and erected on prepared site.

- Average cost \$7.22 per square foot erected

Site preparation 0.59 per square foot

Floor - Gravel and concrete 2.11 per square foot installed

Total cost \$9.92 per square foot

Note: Data from five vendors.

Table 7.

SELECTED MANURE SYSTEM COMPONENTS
COST ESTIMATES*
New York, Spring 1990

Method of Cleaning Barn		Equipment for Loading Storage	
Tractor & scraper	\$ 4,000 - 16,000	Loading dock	\$ 4,000 - 7,000
Front end loader	4,000 - 8,000	Conveyor & stacker	7,000 - 8,000
Alley scraper or gutter cleaner	7,000 - 9,000	Ram pump	8,000 - 12,000
Slotted floor	12,000 - 24,000	Liquid pump (submersible)	8,000 - 14,000
Flush	5,000 - 10,000	Gravity structure & pipe	4,000 - 10,000
		Surface or subsurface sluiceways	4,000 - 10,000
Storages**		Agitation & Hauling Equipment	
Earthen pond	\$ 4,000 - 8,000	Pump with agitator	\$6,000 - 10,000
Paved bottom & ramp	4,000 - 7,000	Liquid manure tank	8,000 - 12,000
Above grade steel	30,000 - 35,000	Gravity - load out structure	4,000 - 10,000
Concrete - poured in place	21,000 - 28,000	Conventional spreader	6,000 - 11,000
Bunker - wood or concrete	11,000 - 18,000	Slurry spreader	7,000 - 15,000
Concrete storage below slats	16,000 - 25,000	Irrigation	20,000 - 30,000

*100 cows, freestall barn.

**Six month storage (except for 12 months in earthen storage).

Source: Snyder, D.P., 1989 Budget Guide, A.E. Res. 89-7, Department of Agricultural Economics, Cornell University. Data reviewed by personal communication with R. Guest and W. Irish, Department of Agricultural Engineering, Cornell University.

INDEX OF PRICES PAID BY NEW YORK DAIRY FARMERS
(1977=100)

Item	Weight	1984	1985	1986	1987	1988	1989*	1990**
Feed	.31	141	119	118	112	133	139	130
Purchased animals	.03	170	163	156	173	188	198	204
Fuel & energy	.05	206	204	178	176	184	193	196
Fertilizer	.05	142	134	127	128	139	144	147
Seed	.02	169	169	167	166	171	181	180
Machinery	.18	181	185	185	189	198	208	218
Building & fencing supplies	.08	138	136	136	137	138	141	144
Farm services & rent	.08	149	152	150	148	150	151	154
Agricultural chemicals	.01	128	128	127	124	126	132	135
Interest rates	.07	151	146	141	134	140	151	144
Farm wage rates	.09	158	169	185	195	206	221	236
Taxes	.03	161	176	181	190	199	206	214
Prices Paid, Not Including Assessment		156	150	149	149	161	168	169
Prices Paid, Including Assessment & Promotion Deduction		162	152	154	151	N/A	N/A	N/A

Source: New York Economic Handbook, 1990; A.E. Ext. 89-37, December 1989, page 57; Department of Agricultural Economics, Cornell University.

*Preliminary

**Projected

Other Agricultural Economics Research Publications

No. 89-17	A Guide to Using the General Algebraic Modelling System (GAMS) for Applications in Agricultural Economics	Robert W. Jefferson Richard N. Boisvert
No. 89-18	An Analysis of the Investment Related Characteristics of New York Farmers	Eddy L. LaDue Joseph H. Kwiatkowski
No. 89-19	Manufacturing Costs in Ten Butter/Powder Processing Plants	Mark W. Stephenson Andrew N. Novakovic
No. 89-20	Wages and Benefits of Full-Time Non Family Employees on Larger Than Average New York Dairy Farms	Thomas Maloney Sue Woodruff
No. 89-21	Chapter 12 Farm Bankruptcy in New York State	Raymond J. Barnes John R. Brake
No. 89-22	The Economic Implications of the U.S. Generic Dairy Advertising Program: An Industry Model Approach	Donald J. Liu Harry M. Kaiser Olan D. Forker Timothy D. Mount
No. 89-23	Operating Results for Dairy Farms Classified by Size, FCRS Data, United States, 1987	B. Stanton D. Bertelsen
No. 89-24	Foreign Assistance and Domestic Financial Markets in the Developing Countries	Claudio Gonzalez-Vega
No. 89-25	Incorporating Price Expectations in the Development of a Processor Level Econometric Model of the U.S. Honey Industry for Policy Analysis	Mary K. Smargiassi Lois Schertz Willett
No. 89-26	Annotated Bibliography of Generic Commodity Promotion Research	Susan Hurst Olan Forker
No. 90-1	Quarterly Northeast Farmland Values, 1985 Through 1989	Loren W. Tauer
No. 90-2	Tax Policy and Business Fixed Investment During the Reagan Era	Edward Kokkelenberg

